

Appl. No: 09/777,139
Amdt. Dated August 23, 2005
Reply to Office Action of July 29, 2005

REMARKS/ARGUMENTS

Prior to this Amendment, claims 1-36 were in the application.

Claim 1 is amended to include the limitations of dependent claim 2, which is canceled.

Independent claim 28 is amended to clarify that a plurality of three or more storage devices are included in the peer-to-peer network (for support see Figure 1).

After entry of the Amendment, claims 1 and 3-36 remain for consideration by the Examiner. The claim amendments do not present new issues and entry is requested to place the claims in condition for allowance or use on appeal.

Allowable Subject Matter

The Office Action mailed July 29, 2005 allowed claims 10 and claims 22-24.

Rejections under 35 U.S.C. §102

Claims 1-4, 6-9, 11-13, 17-21, 25, and 28-36 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,643,794 ("Sicola"). This rejection is respectfully traversed based on the following remarks.

As asserted in the prior response, Sicola is not a proper reference under 35 U.S.C. §102(e) because it has a filing date that is later than the priority date of Applicants application. No response to this assertion was provided in the Office Action, and Applicants request that the Examiner carefully review this matter and either withdraw the Sicola reference or provide sufficient reasons for retaining its use.

Specifically, the filing date of Sicola et al. is March 30, 2000. The instant application claims the benefit of a provisional application filed on February 18, 2000. Specific reference to the provisional application was provided in the Declaration submitted in response to the Notice to File Missing Parts and the Updated Filing Receipt mailed on August 3, 2001 notes the claim of domestic priority to U.S. Prov. Appl. No. 60/183,762, filed February 18, 2000, which is prior to the filing date of Sicola of March 30, 2000. Accordingly, Sicola is not a

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proper 35 U.S.C. §102(e) and the rejections based on this reference should be withdrawn.

Even if Sicola is retained as a reference, the rejection of the claims based on this reference is traversed for the following reasons. Independent claim 1 is amended to include the limitations of dependent claim 2. As discussed in the prior response, claim 2 called for and now amended claim 1 calls for at least two storage nodes that collectively implement a unitary volume of network storage. Sicola shows a storage sites that each hold a redundant copy of the data. Hence, a volume of network storage is implemented independently by each storage site in Sicola rather than collectively by at least two storage nodes as called for in claim 2. The Response to Arguments fails to address this argument of Applicants, and Applicants further direct the Examiner to the first three paragraphs of Sicola's Detailed Description that make it clear the Sicola invention is directed toward a complete backup or mirroring being provided at each node and, hence, this reference does not teach a volume being implemented collectively across at least two storage nodes. For this reason, claim 1 is not anticipated by Sicola, and Applicants request that the rejection be withdrawn.

Claims 3, 4, 6-9, 11, and 12 depend from claim 1 and are believed allowable as depending from an allowable base claim. Additionally, claim 3 calls for the communication medium linking the storage nodes to comprise a private and a public network. The Response to Arguments fails to discuss Applicants' prior assertion that this feature of claim 3 is not shown, and Applicants have reviewed Sicola again and were unable to find a teaching that the dedicated link between the two Sicola devices includes a private AND a public network. Claim 3 is believed allowable for this additional reason.

Independent claim 17 calls for causing a storage node to implement a storage request using an arbitrary subset of the storage nodes. As discussed in the prior response, Sicola does not show or suggest any mechanism that would enable one to implement a storage request in an arbitrary subset. The Sicola system includes two and only two "storage nodes". Both storage sites are used in a redundant fashion, hence, there is no concept of an arbitrary subset of

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storage nodes in Sicola. There is one and only one set of storage nodes and these are the nodes that are linked by the dedicated connection. Accordingly, claim 17 is not shown by Sicola et al. Moreover, nothing in Sicola would suggest the use of more than two storage sites. As a result, claim 17 is not anticipated or suggested by Sicola. Claims 18-21 and 25 depend from claim 17 and are believed allowable as depending from an allowable base claim.

Independent claim 28 calls for, among other things, a peer-to-peer network of storage devices. Claim 28 is amended to further distinguish it from Sicola in that the peer-to-peer network is formed with three or more storage devices rather than the two devices called for providing a remote backup system. For this reason alone, claim 28 is allowable over Sicola.

Additionally, the redundant fibre channel-based system of Sicola is not a peer-to-peer network in the conventional meaning of that term. Sicola uses the term "peer-to-peer" to describe the nature of a fibre channel fabric, but does not discuss whether the storage devices are or can be configured as peers or enable one to make or use a peer-to-peer network of storage devices. Sicola et al. teach that at any given time one of the redundant controllers is an initiator and another is a target. At any given time only one site is able to act as an initiator with respect to replication operations. These are clear indications that Sicola teaches against a peer-to-peer network of storage devices as called for in claim 28. Accordingly, claim 28 and claims 29-31 that depend from claim 28 are believed to be allowable over Sicola et al.

Independent claim 32 calls for storage management processes within the at least one storage node operable to distribute data storage across multiple storage nodes. Sicola et al. show a system in which data is replicated, not distributed. The replicated data in Sicola et al. represents a complete copy of the data and so the data is never "distributed" in the common meaning of that word.

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The Response to Arguments section of the Office Action cites col. 4, lines 38-43 for providing this distributed data storage, but at this citation, Sicola is merely discussing extended clustering where hosts share data across links but does not teach distributing data storage across multiple storage nodes as called for in claim 32. Accordingly, claim 32 is believed to be allowable over Sicola et al.

Independent claim 33 calls for storage management processes comprising program instructions executing in the storage node and responsive to the received data storage access requests and in communication with the network interface to distribute and coordinate data storage operations with external storage nodes. At least this element of claim 33 is not shown or fairly suggested by Sicola et al. The Sicola system involves two storage nodes, only one of which is available to receive storage access requests from a host and act as an initiator for replication operations at any given time. The array controllers do not appear to implement the processes involved in distributing and coordinating data storage operations with external storage nodes. The array controllers appear to handle storage request for their own storage devices, but the description of the failover/failback processes at column 4, lines 54-67 suggests that the hosts must coordinate storage operations between the two storage nodes in Sicola et al. Accordingly, claim 33 and claims 34-36 that depend from claim 33 are allowable.

Rejections under 35 U.S.C. §103

Claim 5 was rejected under 35 U.S.C. §103 based upon Sicola in view of Laursen and claims 14-16 and claims 26-27 were rejected based upon Sicola in view of Dugan. This rejection is respectfully traversed. Claims 5, 14-16, and 26-27 are distinct with respect to Sicola for the reasons set out above in reference to claims 1 and 17. The secondary references do not supply the deficiencies set out above for base independent claims 1 and 17.

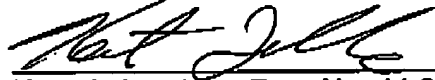
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Conclusions

Based on the above remarks, it is requested that a timely Notice of Allowance be issued in this case.

No fee is believed due with this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,



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